UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
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ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *the application filed on 4-23-2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 April 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Drawings

1.   The drawings (see FIG. 1, 2, 4-8) are objected to because the lines and numeric labels are not clearly viewable. FIG. 1, lines 100, 110 and 120 and FIG. 2, line 200 are not clearly viewable, and FIG. 4-8, the numeric labels and legends on the x and y axis of graphs are not clearly viewable. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2..   The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: **Method of controlling outer loop power in W-CDMA System.**

3.   The disclosure is objected to because of the following informalities: page 10, lines 7, 18, 33, recites "...the method according to the **thesis** "**a reverse power control algorithm of CDMA system...**" It unclear what method is in the thesis "a reverse power control algorithm of CDMA system" since the applicant does not recite anywhere in the specification regarding the method of this thesis. Appropriate correction is required, and no new matter must be entered.

Claim Objections

4.   Claim 2 is objected to because of the following informalities: claim 2 recites, "**EBR**" in line 4, and it should be revised as "**BER**". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6.   Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

        a.   **Claim 1** recites, "...c) calculating **a degree of a SNR threshold adjusting step...**" in line 7 and "**the calculated degree of the SNR threshold adjusting step**" in line 11. It is unclear whether a degree of a SNR threshold is calculated, a degree of a SNR threshold is calculated and adjusted, or a degree of an adjusted SNR threshold is

calculated. Moreover, it is unclear the significant of the limitation "**adjusting step**" since step c "itself" is a calculation step.

b.　　**Claim 1** recites, " d) determining **an actual SNR threshold adjusting step**..." in line 10 and "...the **actual SNR threshold adjusting step**" in line 12-13. First, it is unclear what is being determined, "a degree", "value", "error", "threshold". Both "determining" and "adjusting" are the steps, and one step must define "a degree", "a value", "error", or "threshold" (e.g. **a degree of** an actual SNR threshold). Note that "a step" is just a method, and it can not used as a part of the equation to determine/calculate an actual SNR threshold, only the "a degree", "a value", "error", or "threshold" can be used. Second, let's assume that "a degree of an actual SNR threshold is defined, it is unclear whether a degree of an actual SNR threshold is determined, a degree of an actual SNR threshold is determined and adjusted, or a degree of an adjusted actual SNR threshold is determined. Moreover, it is unclear the significant of the limitation "adjusting step" since step d "itself" is a determination step.

c.　　**Claims 2-10** are also rejected since they are depended upon above rejected claim 1.

d.　　**Claims 11-14** are also rejected for the reason as stated above in claim 1 (b) since the same limitations are recited in the tables.

e.　　**Claim 15** recites, "SNR threshold adjusting step" in line 5. It is unclear what is being determined, "a degree", "value", "error", "threshold". Note that "a step" is just a method, and it can not used as a part of the equation to determine/calculate an actual SNR threshold, only the "a degree", "a value", "error", or "threshold" can be used, (e.g. **a**

degree of SNR threshold). Moreover, it is unclear the significant of the limitation

"adjusting step".

f.   **Claims 16-19** are also rejected for the reason as stated above in claim 15 (e).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

8.   Claims 1-5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vembu

(U.S. 6,259,928) in view of Dohi (U.S. 6,341,224).

        Regarding Claim 1, Vembu discloses a method for controlling outer loop power (see

FIG. 5), comprising the following steps of:

        a) measuring a FER, and calculating an error between measured FER and a target

FER (see FIG.5, Steps 504,508, 528, 512; note that errors are determined based upon target

error; see col. 11, lines 5-15; see col. 9, lines 5-30);

        b) determining a degree of the error (see FIG. 5. steps 508, 528, 512; note that total

number of errors; see col. 11, lines 16-25; see col. 9, lines 5-67);

        c) calculating a degree of a SNR threshold adjusting steps (see FIG. 5, steps

520,532,526) in accordance with the degree of the error (see col. 11, lines 20-30);

   d) determining an actual SNR threshold adjusting step based on the calculated degree

of the SNR threshold adjusting step (see FIG. 5, steps 520,532,526; see col. 11, lines 25-45);

and

   e) adjusting a SNR threshold (see FIG. 2A, SNR threshold 204) in accordance with

the actual SNR threshold adjusting step (see FIG. 2A, measured SNR 208; see col. 5, lines

54-65; FIG. 5, steps 520,532,526; see col. 10, lines 60-67; col. 11, lines 1-5, 30-45);

   Vembu does not explicitly disclose BER and the change of the error. However, using

BER and a degree of the change of the error in order to determined SNR is well known in the

art. In particular, Dohi teaches measuring a BER, and calculating an error between measured

BER and a target BER (see FIG. 4, BER measured unit 22 and BER comparator 23) and a

change of the error (see col. 6, lines 50-66; an average error is the change of the error);

determining a degree of the error and a degree of the change of the error (see FIG. 4. BER

comparator 23; see col. 6, lines 46-52); calculating a degree of a SNR threshold adjusting

step in accordance with the degree of the error and the degree of the change of the error (see

FIG. 4, Target SIR decision unit 12; see col. 6, lines 46-65); determining an actual SNR

threshold adjusting step based on the calculated degree of the SNR threshold adjusting step

(see FIG. 4, Target SIR decision unit 12 and SIR comparator 7; see col. 6, lines 50-62, 14-

32); and adjusting a SNR threshold in accordance with the actual SNR threshold adjusting

step (see FIG. 4, Target SIR decision unit 12 and SIR comparator 7; see col. 6, lines 55 to

col. 7, lines 11). Therefore, it would have been obvious to one having ordinary skill in the art

at the time the invention was made to measure BER, calculate change of error/BER in order

to determine target SIR, as taught by Dohi in the system of Vembu, so that it would achieve

transmission power control which provides consistent channel quality irrespective of

propagation environment or received SIR; see Dohi col. 2, line 35-52.

Regarding Claim 2, Vembu discloses the relationship between error and measured

FER= 0 or FER $\neq$ 0 (see col. 11, lines 12-15; note that adjusting SIR depending measured

FER is 0 or not) and the change of the error is a current calculated error minus a previous

calculated error (see col. 9, lines 54-67; see col. 11, lines 15-20). Dohi discloses the

relationship between error and measured BER= 0 or BER $\neq$ 0 (see col. 6, lines 40-65; note

that adjusting SIR depending measured FER is 0 or not) and the change of the error is a

current calculated error minus a previous calculated error (see col. 6, lines 32-67; note that

when comparing, one must determine the difference between two parameters).

Neither Vembu nor Dohi discloses the error is -10, when measured BER=0; the error

is log10 (measured EBR/target BER), when measured BER 0. Vembu teaches determining

number of errors based on measured FER (= 0 or $\neq$ 0) in order to determine the SNR

threshold. Dohi teaches determining number of errors based on measured BER (= 0 or $\neq$ 0) in

order to determine the SNR threshold. Setting the number of errors to "-10" and "log10

(measured BER/target BER)" does not define a patentable distinct invention over that in the

combined system of Vembu and Dohi since both the invention as a whole and the combined

system of Vembu and Dohi are directed to measuring errors based upon BER and adjusting

SNR in order to control the transmit power. The degree in specifically setting number of

error presents no new or unexpected results, so long as the SNR threshold is defined, the

transmit power control method is processed in a successful way. Therefore, to set number of

errors to "-10" and "log10 (measured BER/target BER)" in order to determined SNR to

control the transmission power would have been routine experimentation and optimization in the absence of criticality.

Regarding Claims 3 and 4, Vembu in view of Dohi discloses the degree of the error and the degree of the change of error as described above in claim 1.

Neither Vembu nor Dohi discloses the table with degree of error between −3 and 3 with respective error < -0.7 and > -0.7. Vembu teaches determining number of errors based on measured FER in order to determine the SNR threshold. Dohi teaches determining number of errors and change of error based on measured BER in order to determine the SNR threshold. Setting and creating a table with degree of error between −3 and 3 and the number of errors to "< -0.7"and "> -0.7" does not define a patentable distinct invention over that in the combined system of Vembu and Dohi since both the invention as a whole and the combined system of Vembu and Dohi are directed to measuring errors and determining the BER/error change based upon BER and adjusting SNR in order to control the transmit power. The degree in specifically setting number of error and the degree of error presents no new or unexpected results, so long as the SNR threshold is defined, the transmit power control method is processed in a successful way. Therefore, to set the table with degree of error between −3 and 3 with respective error < -0.7 and > -0.7 in order to determined SNR to control the transmission power would have been routine experimentation and optimization in the absence of criticality.

Moreover, it is obvious that one skilled in the ordinary art would easily populate a table with degree of error between −3 and 3 with respective error < -0.7 and > -0.7 in order to determine the target/threshold SNR to control the transmission power.

Regarding Claim 11, Vembu in view of Dohi discloses the actual SNR adjusting step threshold is determined according to the degree of SNR threshold adjusting step as described above in claim 1.

Neither Vembu nor Dohi discloses the table with degree of SNR threshold adjusting step between –3 and 3 with actual SNR threshold adjusting step -0.6 and 0.6. Vembu teaches degree of SNR threshold and actual SNR threshold in order to adjust SNR. Dohi teaches degree of SNR threshold and actual SNR threshold in order to adjust SNR. Setting the degree of SNR threshold to "-3"and "3" and actual SNR threshold to "-0.6" and "0.6" does not define a patentable distinct invention over that in the combined system of Vembu and Dohi since both the invention as a whole and the combined system of Vembu and Dohi are directed to adjusting SNR to target/threshold in order to control the transmit power. The degree in specifically crating/setting the degree of SNR threshold and the actual SNR threshold presents no new or unexpected results, so long as the target SNR threshold is defined and adjusted, the transmit power control method is processed in a successful way. Therefore, to set the table with degree of SNR threshold adjusting step between –3 and 3 with actual SNR threshold adjusting step -0.6 and 0.6 in order to adjust SNR to control the transmission power would have been routine experimentation and optimization in the absence of criticality.

Moreover, it is obvious that one skilled in the ordinary art would easily populate a table with degree of SNR threshold adjusting step between –3 and 3 with actual SNR threshold adjusting step -0.6 and 0.6 in order to adjust SNR to control the transmission power.

Allowable Subject Matter

9.   Claims 5-10 and 12-19 would be allowable if rewritten to overcome the rejection(s)

under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the

limitations of the base claim and any intervening claims.

Conclusion

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ian N Moore whose telephone number is 571-272-3085. The

examiner can normally be reached on M-F: 9-5.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ken Vanderpuye can be reached on 571-272-3078. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

        Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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11/15/04

BRIAN NGUYEN
PRIMARY EXAMINER